Varicocele

By Mayo Clinic Staff

A varicocele (VAR-ih-koe-seel) is an enlargement of the veins within the loose bag of skin that holds your testicles (scrotum). A varicocele is similar to a varicose vein that can occur in your leg.

Varicoceles are a common cause of low sperm production and decreased sperm quality, which can cause infertility. However, not all varicoceles affect sperm production. Varicoceles can also cause testicles to fail to develop normally or shrink.

Most varicoceles develop over time. Fortunately, most varicoceles are easy to diagnose and many don't need treatment. If a varicocele causes symptoms, it often can be repaired surgically.

A varicocele often produces no signs or symptoms. Rarely, it may cause pain. The pain may:

- Vary from sharp to dull discomfort
- Increase with standing or physical exertion, especially over long periods
- Worsen over the course of a day
- Be relieved when you lie on your back

With time, varicoceles may enlarge and become more noticeable. In young men, the presence of a varicocele impairs sperm production and can often be improved with treatment.

When to see a doctor

Because a varicocele usually causes no symptoms, it often requires no treatment. Varicoceles may be discovered during a fertility evaluation or a routine physical exam.

However, if you experience pain or swelling in your scrotum, discover a mass on your scrotum, notice that your testicles are different sizes, or develop a varicocele in your youth, or you're having problems with fertility, contact your doctor. A number of conditions can cause a scrotal mass or testicular pain, some of which require immediate treatment.

Your spermatic cord carries blood to and from your testicles. It's not certain what causes varicoceles. However, many experts believe a varicocele forms when the valves inside the veins in the cord prevent your blood from flowing properly. The resulting backup causes the veins to widen (dilate). This may then result in damage to the testicle and result in worsened fertility.

Varicoceles often form during puberty. Varicoceles usually occur on the left side, most likely because of the position of the left testicular vein. However, a varicocele in one testicle can affect sperm production in both testicles.
There don't appear to be any significant risk factors for developing a varicocele. However, some research suggests that being overweight may reduce your risk while being taller may increase the risk.

A varicocele may cause

- **Shrinkage of the affected testicle (atrophy).** The bulk of the testicle comprises sperm-producing tubules. When damaged, as from varicocele, the testicle shrinks and softens. It’s not clear what causes the testicle to shrink, but the malfunctioning valves allow blood to pool in the veins, which can result in increased pressure in the veins and exposure to toxins in the blood that may cause testicular damage.

- **Infertility.** Varicoceles may keep the local temperature in or around the testicle too high, affecting sperm formation, movement (motility) and function.

You're likely to start by seeing your family doctor or a general practitioner. However, in some cases when you call to set up an appointment, you may be referred immediately to a urologist.

Here's some information to help you get ready for your appointment, and know what to expect from your doctor.

**What you can do**

- **Write down any symptoms you're experiencing,** including any that may seem unrelated to the reason for which you scheduled the appointment.

- **Write down key personal information,** including any major stresses or recent life changes.

- **Make a list of all medications,** vitamins and supplements that you're taking.

- **Take a family member or friend along,** if possible. Sometimes it can be difficult to remember all the information provided to you during an appointment. Someone who accompanies you may remember something that you missed or forgot.

- **Jot down questions to ask** your doctor.

Preparing a list of questions will help you make the most of your time with your doctor. List your questions from most important to least important. For varicocele, some questions to ask include:

- What is likely causing my symptoms?
- Are there other possible causes for my symptoms?
- What kinds of tests do I need?
- Is my condition likely temporary or more permanent?
- Will this condition affect my fertility?
- What treatments are available? Which do you recommend?
- What are the alternatives to the primary approach that you're suggesting?
- I have these other health conditions. How can I best manage these conditions together?
- Are there any restrictions on sexual activity that I need to follow?
- Are there any brochures or other printed material that I can take home with me? What websites do you recommend visiting?

In addition to the questions you've prepared, don't hesitate to ask questions that arise during your appointment.

**What to expect from your doctor**
Your doctor is likely to ask you a number of questions, including:

- When did you begin experiencing symptoms?
- Have your symptoms been continuous or occasional?
- How severe are your symptoms?
- What, if anything, seems to improve your symptoms?
- What, if anything, appears to worsen your symptoms?

**What you can do in the meantime**

Take an over-the-counter pain reliever and wear an athletic supporter to relieve pressure.

Your doctor will conduct a physical exam, which may reveal a nontender mass above your testicle that feels like a bag of worms. If it's large enough, your doctor will be able to feel it. If you have a smaller varicocele, your doctor may ask you to stand, take a deep breath and hold it while you bear down (Valsalva maneuver). This helps your doctor detect abnormal enlargement of the veins.

If the physical exam is inconclusive, your doctor may order a scrotal ultrasound. This test, which uses high-frequency sound waves to create precise images of structures inside your body, may be used to ensure there isn't another reason for your symptoms. In certain cases, further imaging may be recommended to rule out other causes for the varicocele, such as a tumor compressing the spermatic vein.

Varicocele treatment may not be necessary. However, if your varicocele causes pain, testicular atrophy or infertility or if you are considering assisted reproductive techniques, you may want to undergo varicocele repair.

The purpose of surgery is to seal off the affected vein to redirect the blood flow into normal veins. In cases of male infertility, treatment of a varicocele may improve or cure the infertility or improve the quality of sperm if techniques such as in vitro fertilization (IVF) are to be used.

Varicoceles typically develop in adolescence and likely result in worsened sperm production. Despite the decreased sperm quality overall, many men with varicoceles continue to have sufficient sperm quality to achieve a pregnancy later in life.

Clear indications to repair a varicocele in adolescence include progressive testicular atrophy, pain or abnormal semen analysis results. Although treatment of a varicocele generally improves sperm characteristics, it is not clear if an untreated varicocele leads to progressive worsening of sperm quality over time.

Varicocele repair presents relatively few risks, which may include:

- Buildup of fluid around the testicles (hydrocele)
- Recurrence of varicoceles
- Testicular atrophy
- Infection
- Damage to an artery

Repair methods include:

- **Open surgery.** This treatment usually is done on an outpatient basis, during a general or local anesthetic. Commonly, your surgeon will approach the vein through your groin (inguinal or subinguinal), but it's also possible to make an incision in your abdomen or below your groin.

http://www.mayo clinic.org/diseases-conditions/varicocele/basics/definition/con-20024164/?p=1
Advances in varicocele repair have led to a reduction of post-surgical complications. One advance is the use of the surgical microscope, which enables the surgeon to see the treatment area better during surgery. Another is the use of Doppler ultrasound, which helps guide the procedure.

You may be able to return to normal, nonstrenuous activities after two days. As long as you’re not uncomfortable, you may return to more strenuous activity, such as exercising, after two weeks.

Pain from this surgery generally is mild but may continue for several days or weeks. Your doctor may prescribe pain medication for a limited period after surgery. After that, your doctor may advise you to take over-the-counter (OTC) painkillers, such as acetaminophen (Tylenol, others) or ibuprofen (Advil, Motrin IB, others) to relieve discomfort.

Your doctor may advise you not to have sex for a period of time. Most often, it will take several months after surgery before improvements in sperm quality can be seen with a semen analysis. This is because it takes approximately three months for new sperm to develop.

Open surgery using a microscope and subinguinal approach has the highest success rates when compared with other surgical methods.

- **Laparoscopic surgery.** Your surgeon makes a small incision in your abdomen and passes a tiny instrument through the incision to see and to repair the varicocele. This procedure requires general anesthesia.

- **Percutaneous embolization.** This procedure is done during local anesthesia on an outpatient basis. A radiologist inserts a tube into a vein in your groin or neck through which instruments can be passed. Viewing your enlarged veins on a monitor, the doctor releases coils or a solution that causes scarring to create a blockage in the testicular veins, which interrupts the blood flow and repairs the varicocele.

  This procedure isn't as widely used as surgery.

If you have a varicocele that causes you minor discomfort, but doesn't affect your fertility, you might try the following for pain relief:

- **Take over-the-counter painkillers,** such as acetaminophen (Tylenol, others) or ibuprofen (Advil, Motrin IB, others).

- **Wear an athletic supporter** to relieve pressure.

References


